

Trends in the
**OHIO STRAWBERRY
INDUSTRY**

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**OHIO AGRICULTURAL
EXPERIMENT STATION**

Wooster, Ohio

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TRENDS IN THE OHIO STRAWBERRY INDUSTRY

M. E. CRAVENS and L. U. COCKROFT¹

SUMMARY

Strawberry production in the United States declined greatly during World War II and has only recently attained pre-war levels. Production in Ohio did not keep pace with that in competing states after the war. California has gone above pre-war levels.

Strawberry acreage in the United States has declined from about 208,000 acres in 1928 to about 109,000 today.

Acreage in Ohio has declined from about 5,100 acres in 1939 to 1,700 in 1954. Michigan had about 10,000 acres in 1939 and 1954. The greatest acreage decline has been in the mid-spring states and the least in the late spring states.

The northeastern counties in Ohio are producing an increasingly large part of the state's strawberry crop. The states California, Oregon, and Washington produce about 60 percent of the United States strawberry crop today compared with 20 percent in 1945.

Strawberry yields in Ohio are below the United States average and those in major competing states. Yields in major competing states have increased more since 1940 than those in Ohio. Per acre yields in California are about five times those in Ohio today compared with about double Ohio yields in the 1930's.

The long time trend in strawberry prices has been similar to that of all farm products. Year to year fluctuations are explained in considerable part by the size of the strawberry crop. On the average, an Ohio strawberry crop 40 percent larger than for the previous year returned a price 19 percent lower than for the previous year. A crop 40 percent below that for the previous year brought a price 37 percent above the previous year. Strawberry prices in Ohio have generally averaged above those in competing states in recent years.

Over the past seven years the seasonal farm price of Ohio strawberries has dropped from an index of 110 in mid-May to about 92 in mid-June with little change thereafter.

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Total strawberry consumption in the United States in 1954 was at about pre-war levels. Per capita consumption was down from 2.5 quarts in 1941 to 1.9 quarts in 1954.

Ohio growers produce about one in eight quarts of strawberries consumed by Ohio consumers in all forms; i. e., fresh, frozen, and processed. For fresh berries only one in each three or four quarts consumed in Ohio is produced by Ohio growers.

In 1954, 55 percent of the U. S. strawberry crop was processed compared with 10 percent in 1939.

CONCLUSIONS

Ohio growers have definite market advantages in strawberry production. Local markets are numerous and local production limited in most areas in the state. There are considerable areas of land where both the climate and soil are favorable to strawberry production. However, the disadvantages have apparently been greater than the advantages during recent years. These include:

- 1) Low yields—to a certain extent this difficulty is common to all eastern United States when compared with California and Oregon. Progress in correcting this appears to be on the way in experimental and some commercial plantings.
- 2) Great variability in yields from year to year. This is due in part to plantings on poor sites.
- 3) Seasonal labor problems. Labor is scarce, especially for harvest needs.
- 4) Variable pack and quality. This discourages the acceptance and promotion of "local" berries by large retail outlets.

In spite of the decline in strawberry acreage and the many disadvantages of Ohio producers in strawberry production, strawberries would appear to be an increasingly profitable crop in recent years for the grower who can obtain satisfactory yields. Wide variations exist in the effectiveness with which producers take advantage of their marketing advantages in Ohio. Much remains to be done in adapting strawberry marketing to local demand.

The day of the non-commercial "sideline" grower is apparently about past. Much of Ohio's production has been and still is in this category. This type grower is normally unable to meet two major requirements of successful strawberry production. These are: To obtain high rates of production and to adequately exploit local markets.

INTRODUCTION

Strawberries were third in value of all fruits in Ohio in 1949, with a farm value of almost one million dollars (Table 1). The trend in strawberry production, like that of most of the tree fruits, has been downward. Strawberry production in Ohio has varied greatly as conditions either favored profits or made profits from their production uncertain.

This study points out the trends in the strawberry industry in Ohio and the principal competing states and analyzes the reasons for these trends.² The analysis also seeks to suggest the reasons for any differences in trends in Ohio and in selected competing states and how Ohio growers can adjust production and marketing to these trends in order to obtain higher profits.

The averages and trends reported here do not represent those of individual commercial growers in yields, production or acreage. They are, however, the best available data on the Ohio strawberry industry today with comparisons of the industry in Ohio with that for competing areas and for past years.

²The basic data were obtained from the following reports: a) Truck Crop Reports; b) Commercial Vegetables for Fresh Market from U.S.D.A., A.M.S.; c) Agricultural Statistics, U.S.D.A.; and d) U. S. Census of Agriculture, U. S. Department of Commerce.

**TABLE 1.—Farm Value of Fruits in Ohio, 1945 and 1950
Census of Agriculture**

	1944		1949	
	Dollar value	Percent of total	Dollar value	Percent of total
Strawberries	575,094	3.0	956,753	7.6
Apples	11,790,866	61.1	7,685,120	61.1
Peaches	3,745,043	19.4	1,842,780	14.7
Grapes	1,446,011	7.5	877,051	7.0
Pears	504,538	2.6	273,408	2.2
Cherries	528,809	2.7	239,988	1.9
Plums and Prunes	211,048	1.1	169,567	1.3
Raspberries	451,762	2.3	419,860	3.3
Other berries	51,905	.3	33,283	.3
Total	19,305,076	100.0	12,569,563	100.0

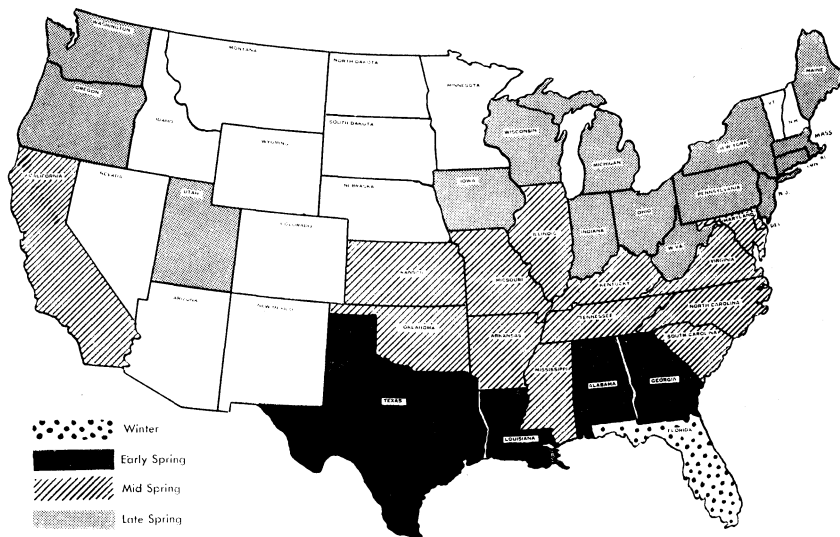
Source: U. S. Census of Agriculture, 1950, Vol. 2, pp. 696-7

PROCEDURE

Trends in Ohio were compared with those for states with similar time of marketing of crop as for northeastern Ohio and similarly high levels of industrialization and purchasing power. Comparisons were also made between the trends in the major seasonal groupings of states established by the United States Department of Agriculture (Figure 1). Each state has been placed in the group which corresponds to the period when their heaviest supplies are available. Periods covered by the seasonal groups are:

Winter	- - - - -	January, February, March
Early Spring	- - - - -	April
Mid-Spring	- - - - -	May
Late Spring	- - - - -	June

The basic time series data were compiled for the selected states, seasonal groups, and the United States. The five series compiled were harvested acreage, yield, production, price, and value, generally for the



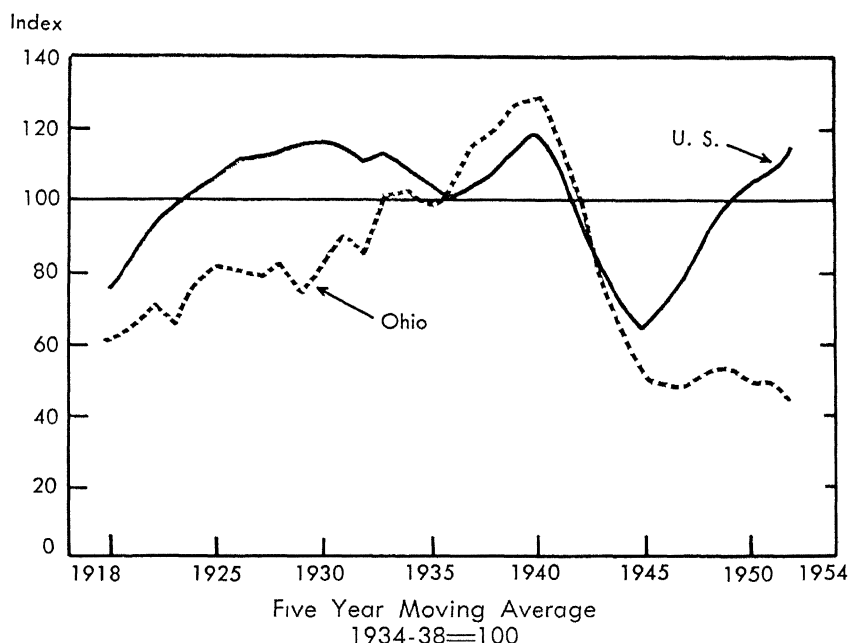
Source:

1. Commercial Vegetables for Fresh Market 1939-50 U.S.D.A., B.A.E.

Fig. 1.—Geographical division of United States showing the commercial strawberry production states in four seasonal groupings.

period 1918 to 1954. Year to year fluctuations were removed by using the five year moving average. The price and value series were adjusted by the All Commodity Wholesale Index of Prices, (1935-39=100).

To analyze the distribution of the crop among the areas within Ohio it was necessary to use data for crop reporting districts. The counties included in each of these nine crop reporting districts are indicated in Figure 10.



Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B. A. E.

Fig. 2.—Trends in strawberry production, Ohio and U. S., 1918-1954.

STRAWBERRY PRODUCTION

Strawberry production in the United States has averaged 11.7 million crates yearly over the past five years, 1950 to 1954. Production varied from 10.9 million in 1950 to 12.4 million in 1953. Ohio's strawberry production averaged 142 thousand crates for the same period, varying from 183 thousand in 1950 to 94 thousand crates in 1954.³

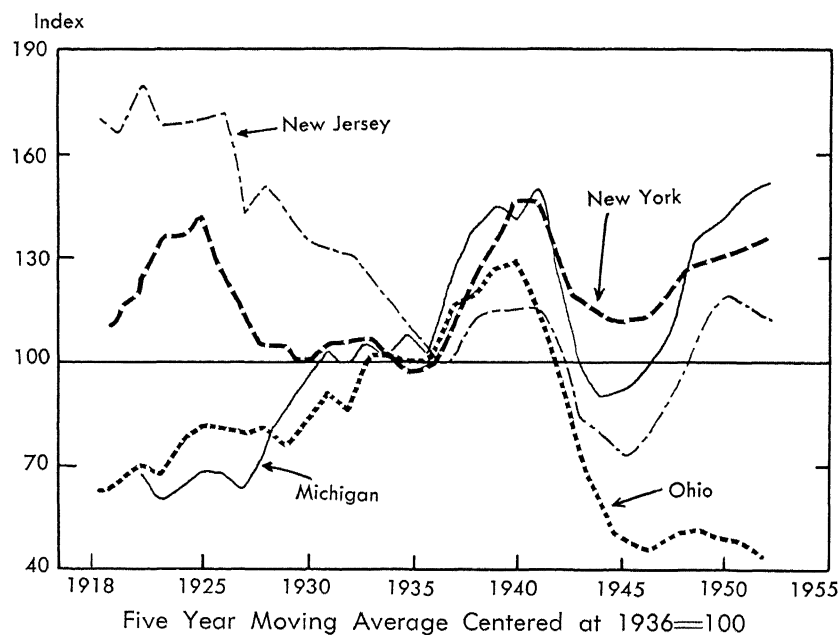
³24-quart crate equivalent.

California is now the leading strawberry producing state with 35 percent of United States production in 1954. Production in California increased very rapidly after the end of World War II and passed Oregon, second highest producer, in 1950.

LONG TIME TRENDS IN PRODUCTION

Strawberry production in Ohio doubled between 1918 and 1940, then declined greatly during the war. Present Ohio production is about equal to the wartime low but is less than one-third of the pre-war level (Figure 3). Michigan production more than doubled between 1918 and 1940 and declined during the war. By 1954 Michigan had regained its pre-war position while Ohio has recovered none of its war-time losses. Two other late spring states, New York and New Jersey, have had increased production since the end of World War II with New Jersey reaching its pre-war level and New York failing to do so.

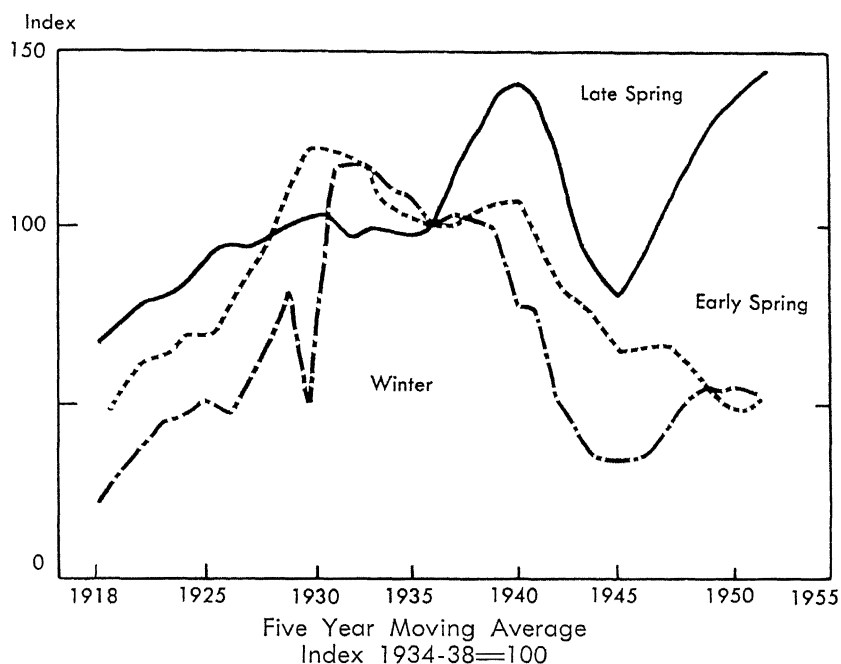
United States production of six million crates in 1918 increased to 12 million by 1940, then decreased sharply to five million during World War II. Since the war production has about reached the pre-war level.



Source:

1. Truck Crops Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 3.—Trends in strawberry production, selected states 1918-1954.



Source:

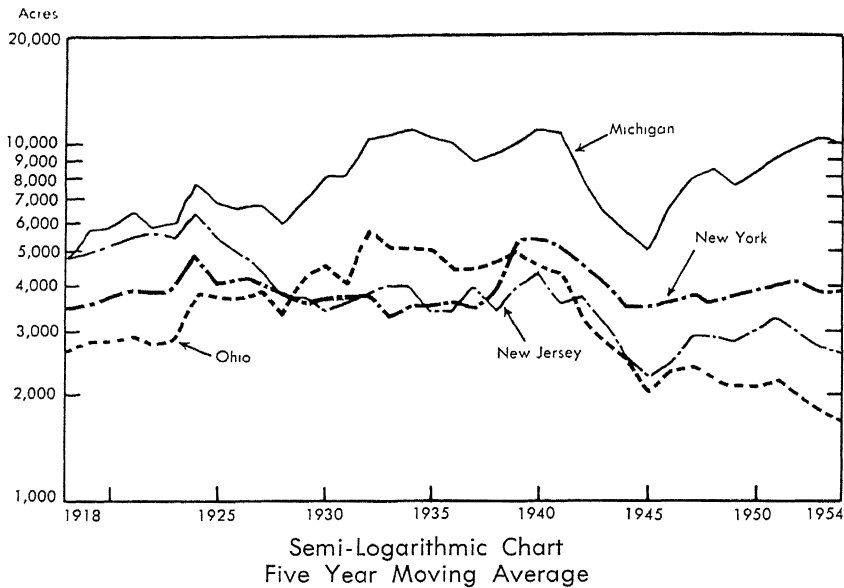
1. Truck Crop Reports, 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 4.—Trends in strawberry production, seasonal groups, 1918-54.

Trends in production have varied among the different seasonal groups of states. Production in the Late Spring states has increased constantly except for the depression and World War II periods (Figure 4). The present level of about five million crates is twice the production level of the early 1920's. Production in Winter and Early Spring states increased until the late 1930's, then declined to about the 1920 level (Figure 4). Production in the Mid-Spring states has been increasing since the end of World War II but is still slightly below the level reached in 1923.

ACREAGE TRENDS

Ohio was harvesting about 2,600 acres of strawberries in 1918 compared with an estimated 1,700 acres at the present time (Figure 5). From a high in production of about 5,000 acres in the 1930's Ohio acreage decreased sharply as World War II began. After the war, there was only a slight increase and then another period of decline to about 1,700 acres at present.



Source:

1. Truck Crop Reports 1918-1927, 1927-1941.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54.

Fig. 5.—Harvested acreage of strawberries, selected states, 1918-54.

The long time trend in United States strawberry acreage has been downward since 1928 when a high of 207,630 acres was reached. At the end of World War II United States acreage had declined to 72,000 acres. A postwar high of 143,850 acres of strawberries in the United States was reached in 1951 but by 1954 acreage had fallen to 109,300 acres.

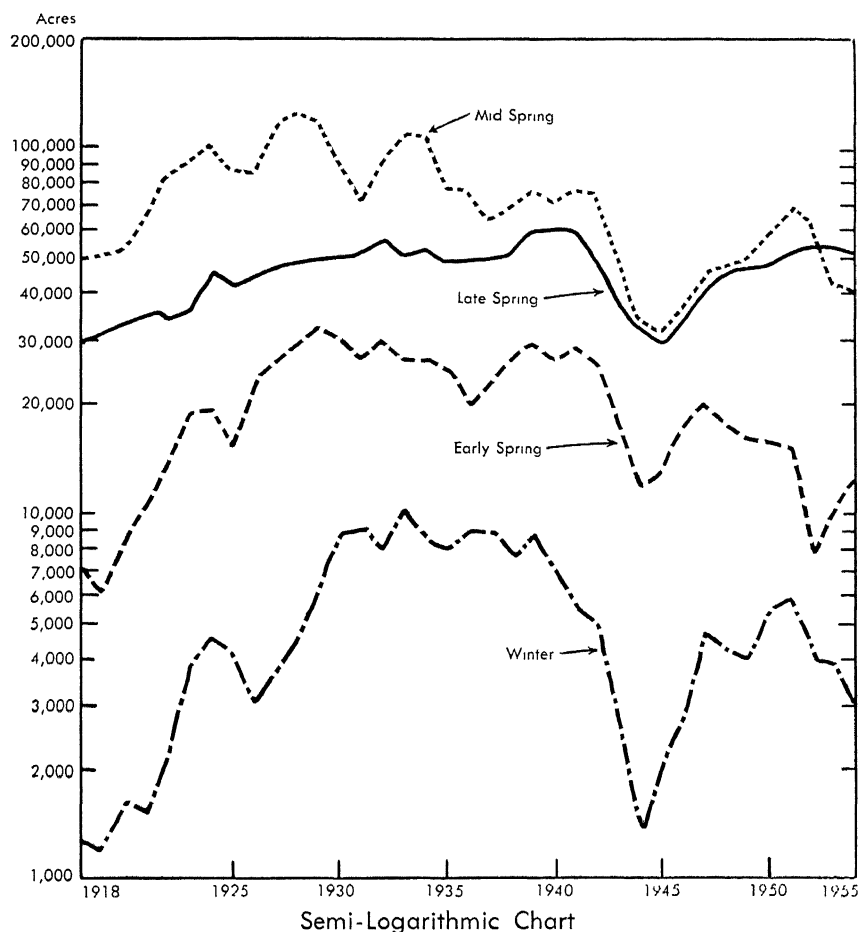
Of the four seasonal groups, the Late Spring group has had the smallest percentage fluctuation in acreage (Figure 6). The Winter group acreage has varied the most, declining by about 80 percent during World War II. Since World War II the acreage of Late Spring and Winter states is holding steady, while that for Mid-spring states is decreasing, and the Early Spring states is increasing.

Of the four selected states, Ohio, Michigan, New York, and New Jersey, Michigan harvested the largest acreage during recent years (about 10,000 acres).

At the 1950 census, Columbiana County was the highest producing county in Ohio with 9,029 crates on 110 acres. This county is located in the Appalachian foothills of northeastern Ohio. Montgomery

County, in west central Ohio, had 132 acres, highest in the state, but production was only 4,939 crates or half as much as in Columbiana County.

There are only 16 counties in the state which have more than 30 acres in strawberry production and 14 of these are in the northern districts. Lawrence County, located centrally on the Ohio River, and Montgomery County are the only counties with large acreages in southern Ohio. An earlier season (earliest in Ohio) with relatively favorable



Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

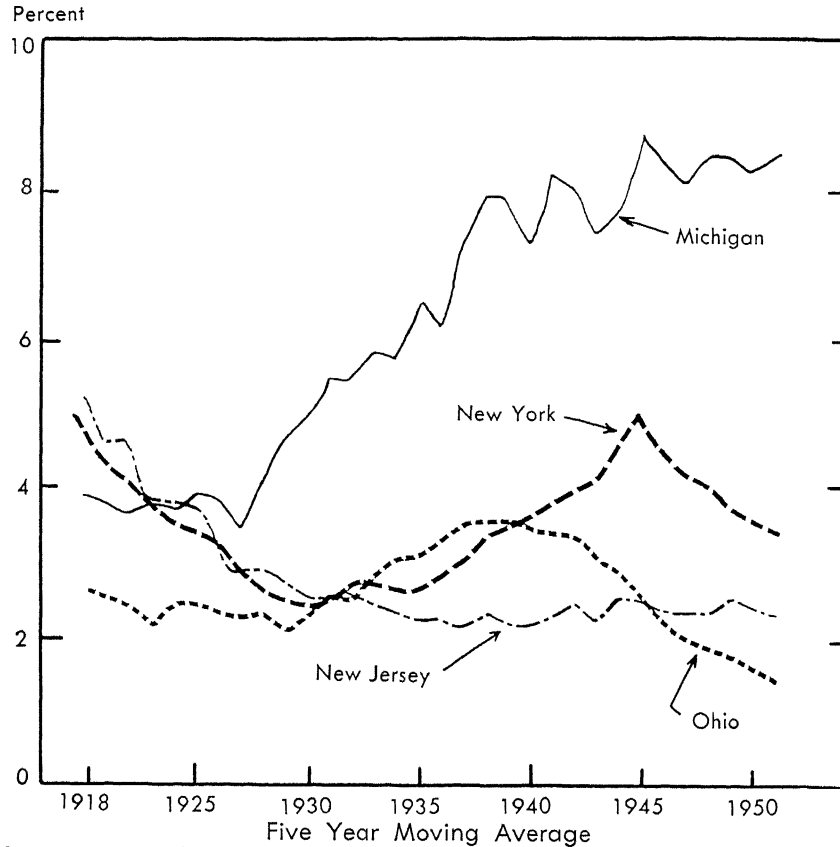
Fig. 6.—Harvested acreage of strawberries, seasonal groups, 1918-1954.

prices helps account for the higher production in Lawrence than in most adjacent counties. Along Lake Erie, the production from frosts and good local markets favor high production of all fruits.

There were 37 counties with fewer than 10 acres of strawberries while 35 counties had from 10 to 30 acres. The more important strawberry producing counties are located in fairly heavily populated areas with many local markets.

LOCATION OF PRODUCTION

Ohio's present strawberry production expressed as percent of United States production is down to 1.4 percent from 3.5 percent in pre-World War II years (Figure 7). During the war years, Ohio's



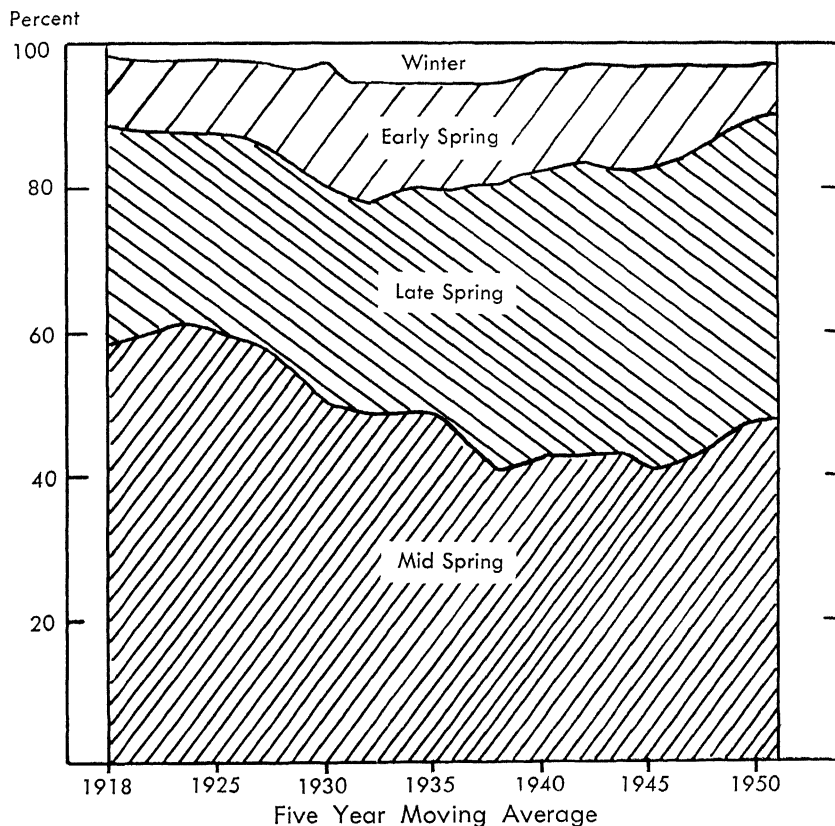
Source: See Chart 1

1. Truck Crop Reports 1918-1927, 1927-1941, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 7.—Percentage of U. S. total strawberry production in selected states, 1918-1954.

share dropped only slightly, but it has been decreasing steadily in the postwar years. In competing nearby states, New York has also had a postwar decrease from 4.9 to 3.4 percent. New Jersey has held fairly steady at about 2.5 percent of United States production. Since 1927, Michigan has steadily increased its share of United States production. At present, its share of total production is greater than the combined production of Ohio, New York, and New Jersey.

The percentage of total United States strawberry production in each of the four seasonal groups of states has varied considerably. The Late Spring states have increased their proportion of production from 30 percent in 1920 to 43 percent at the present time (Figure 8). The



Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 8.—Percentage of U. S. total strawberry production in each production area, 1918-1953.

Winter crop, from Florida, has increased from 1.7 to 2.7 percent over the same period.

The Mid-spring states with 48 percent of total production are the largest producers but are less important at present than in the early 1920's when they accounted for 60 percent. The Early Spring states have also decreased from about 16 percent in 1932 to 6.6 percent of total production at present.

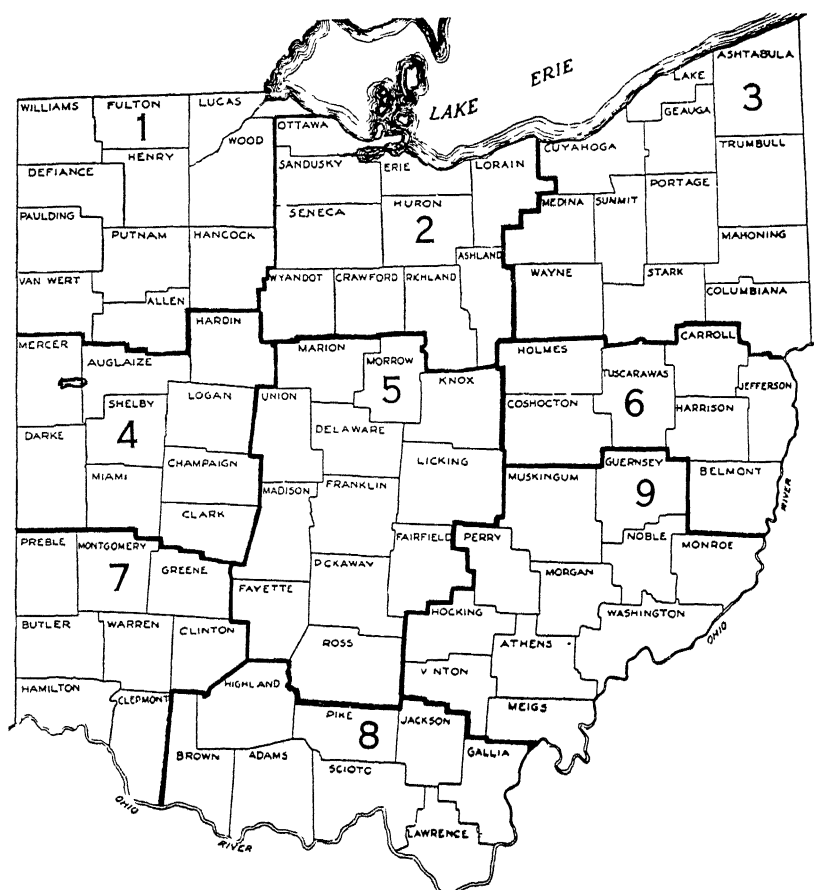


Fig. 9a.—Counties in each of the nine crop reporting districts in Ohio.

CHANGES IN THE LOCATION OF STRAWBERRY PRODUCTION

Ohio

Crop Reporting District 3, which includes 12 counties in north-eastern Ohio, produced about 36 percent of the crop on 32 percent of

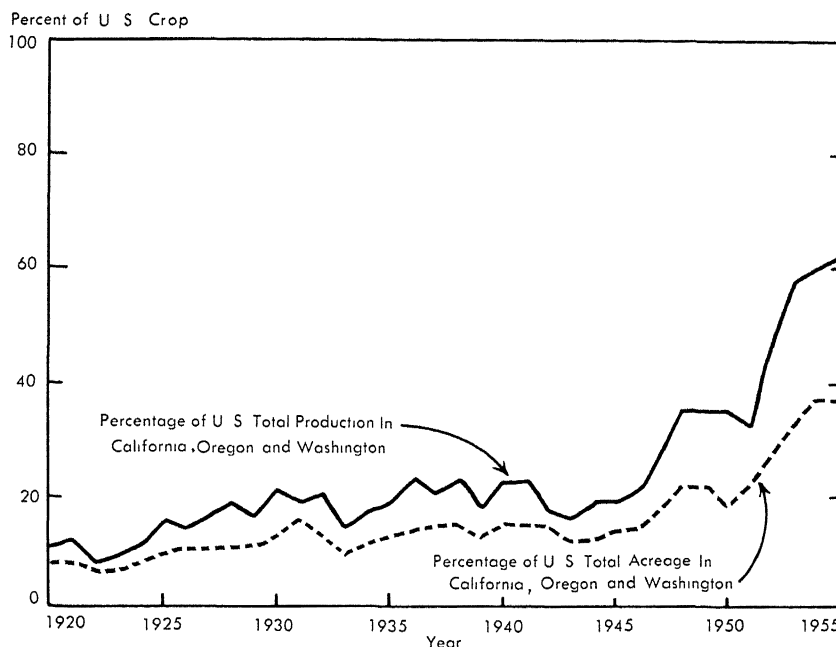


Fig. 9b.—Proportion of U. S. strawberry acreage and production in the states of California, Oregon and Washington, 1920-1955.

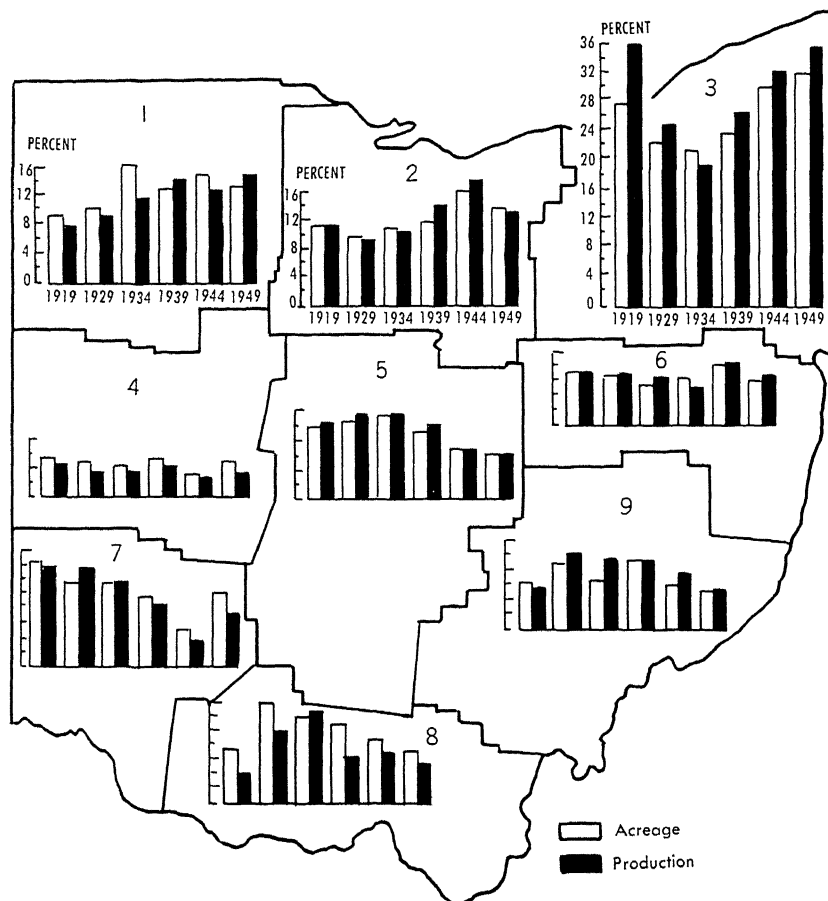
the acres harvested according to the 1950 census figures (Figure 10). Since 1930, this area has been gaining in the share of the state's production. Crop reporting Districts 1 and 2 produced 15 and 14 percent respectively of Ohio strawberry crop (in 1949). Districts 1, 2, and 3, bordering Lake Erie across the northern part of the state, produced about two-thirds of Ohio's total strawberry production.

The other six crop reporting districts are becoming relatively less important. District 7 in southwestern Ohio, producing 7.7 percent, is the most important southern district but it is also one of the declining areas. District 4 in west central Ohio has the smallest percentage of production. This is an area of level, highly productive land devoted mostly to general corn, hog, and cattle farms.

United States

The three Pacific coast states, California, Oregon, and Washington, have increased their proportion of the United States crop since 1920 from about 10 percent of United States strawberry production to 62 percent (Figure 9b). Most of this increase has come since 1945 when they accounted for 20 percent of the United States production.

Acreage in the Pacific coast states has increased from about 10 percent of the U. S. total in 1920 to 37 percent today. The greatest increase has come during the post-World War II period.



Year 1924 omitted because production data is not available.

Source:

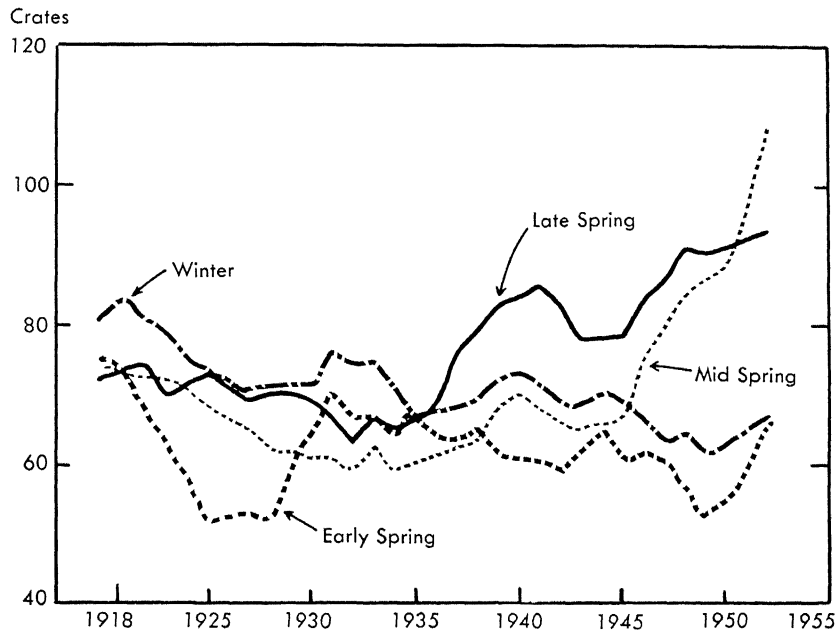
1. Unpublished Information, Ohio Crop Reporting Service, U.S.D.A., Agricultural Marketing Service.

Fig. 10.—Percentage of total Ohio strawberry acreage and production in each crop reporting district, 1919-1949.

YIELDS PER ACRE

Average yields per acre of strawberries in Ohio are about 76 crates compared with the United States average of 89 crates (Figure 11).⁴ Immediately prior to World War II, Ohio strawberry yields reached 96 crates per acre, their highest average yield to date. Of the four selected states, at the present time Michigan yields are the highest. New York yields are only slightly less than in Michigan, and in New Jersey, yields are still lower at 86 crates.

Michigan's average yield is now 101 crates per acre or about 25 crates greater than those for Ohio while in 1940, Ohio's average yield of 96 crates was 9 crates more than that in Michigan.



Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 11.—Yield of strawberries per acre in each production area 1918-54.

⁴These yields are extremely low by commercial standards. They include those of a large number of part time "backyard" growers. The yields in Ohio probably reflect a greater proportion of this type of grower than for the states compared here, but the data reflect the overall trends among states and seasons.

Yields in the Late Spring and Mid-spring states have made large gains compared with those in the Winter and Early Spring states (Figure 11). These gains have come since 1935 and have been greatest since World War II. Oregon, Washington, and Michigan are the states of the Late Spring states which have contributed the most to increasing average yields, while in the Mid-spring group, the main factor is the tremendous increase in California yields and acreage. In contrast, the long time trend of the Winter and Early Spring states has been one of decreasing yields. Present yields are 65 crates for the Winter states and 58 crates for the Early Spring states compared with 93 and 109 crates respectively in the Late Spring and Mid-spring states.

California yields are about five times as great per acre as those in Ohio. This extremely high yield is apparently due to a combination of natural advantages of favorable climatic and soil conditions, to irrigation, and to varieties and techniques adapted to these conditions. Before World War II, California yields were less than twice as high as those in Ohio.

ACREAGE OF STRAWBERRIES PER FARM

Ohio strawberry producers harvest about 0.42 acres of strawberries per farm reporting them (Table 2). This is less than half the U. S. average of 1.13 acres per farm reporting strawberries. The East North Central region including Ohio averages about 0.64 acres per farm while the East South Central region averages about 1.24 acres. The Pacific Coast growers harvest about 3.13 acres per farm reporting strawberries.

TABLE 2.—Strawberries—Average Acres per Farm, by Geographical Divisions for Census Years 1939, 1944, 1949

Area or State	Average Acres per Farm Reporting		
	1939	1944	1949
Ohio	0.39	0.42	0.42
West North Central	0.30	0.21	0.49
New England	0.47	0.40	0.50
East North Central	0.38	0.34	0.64
Middle Atlantic	0.56	0.64	0.78
Mountain	0.52	0.40	0.81
South Atlantic	1.07	0.61	1.10
East South Central	1.20	1.04	1.24
West South Central	2.36	1.50	1.79
Pacific	1.83	1.37	3.13
United States	0.75	0.52	1.13

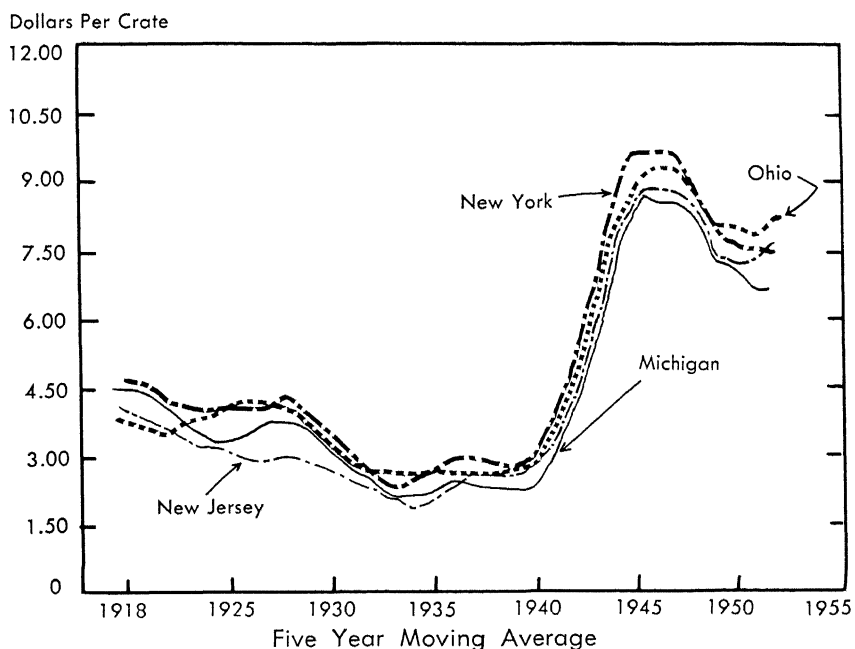
Source (See Table 1.)

STRAWBERRY PRICES

The dollar price of strawberries depends on the production of strawberries, the demand for strawberries, and the value of the dollar, as well as on competition from other fruits and on other lesser variables. The greatest fluctuations in prices over the past 35 years have been due to variations in the value of the dollar. However, variations in strawberry production have been the greatest factor in year to year changes in prices.

PRICE COMPARISONS

Recent farm prices of Ohio strawberries are about \$7.75 per crate compared with about \$2.60 in the 1930's and about \$3.75 in the early 1920's. Over the years, prices received by Ohio growers have averaged \$.50 to \$1.00 higher than those received in the remainder of the Late Spring States (Fig. 12). Top prices received by Ohio growers were about \$9.75 per crate in 1946.



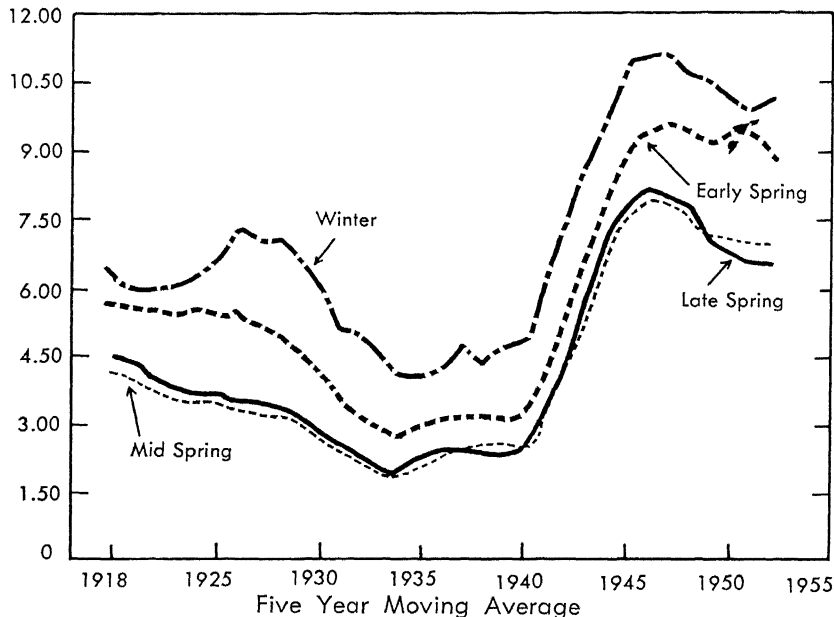
1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 12.—Average farm price of strawberries, selected states, 1918-1954.

A farm price difference of from \$1.50 to \$3.50 per crate has existed between the Winter and the Late Spring strawberry producers over the past several years (Figure 13). Early Spring prices fall between these extremes. Mid-Spring strawberry prices have averaged very close to those for the Late Spring states although for the past few years Mid-Spring prices have been higher. Recently, the Late Spring states' prices have been approximately \$6.50 and the Winter states' prices about \$10.00 per crate while in 1935, the prices were about \$2.25 and \$4.00 respectively. During the depression years with depressed prices, the prices received by growers in the Winter states declined more than those in the Late Spring states. Transportation and marketing costs affected farm prices more for the more distant "Winter" shippers who had relatively high transportation and marketing costs compared with the predominantly local shipper.

Average strawberry prices received by Ohio, New York, New Jersey, and Michigan growers are very similar and fluctuate together (Figure 12). Recently Ohio growers have received \$.75 to \$1.25

Dollars Per Crate



Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

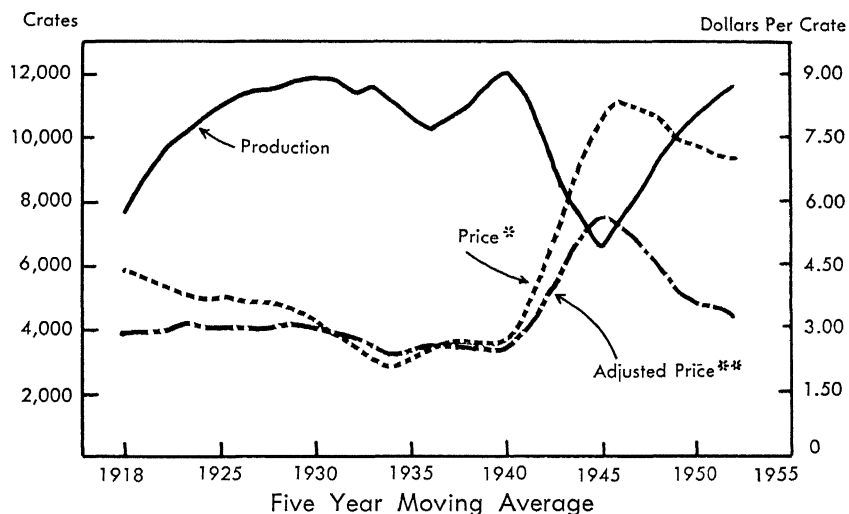
Fig. 13.—Average farm price of strawberries, by production areas, 1918-1954.

more per crate than the average received by Michigan growers. This favorable price differential is created by the more limited production of strawberries in Ohio than in Michigan relative to market demand. Until the last few years, New York's crop generally brought \$.25 to \$.50 more per crate than that in Ohio. During the last few years, the New York farm price has been about \$.50 to \$1.00 below that in Ohio. The trend towards still higher farm prices in Ohio than in the other late spring states will continue as long as the production in Ohio continues to decline relative to these other states. An increase in Ohio production could slow this down or even reverse it.

SUPPLY-PRICE RELATIONSHIPS

The supply-price relationships can be broken down into two phases (1) the year to year relationships and (2) the long time trends.

Both the year to year changes and long time trends are difficult to interpret. During the period 1918-1930, U. S. strawberry production increased by about 50 percent while prices remained about constant (Figure 14). However, during the period 1940-1945 strawberry pro-



*Actual Prices.

**Actual Price Adjusted by Wholesale Index of Prices, Base 1935-39 =100.

Source:

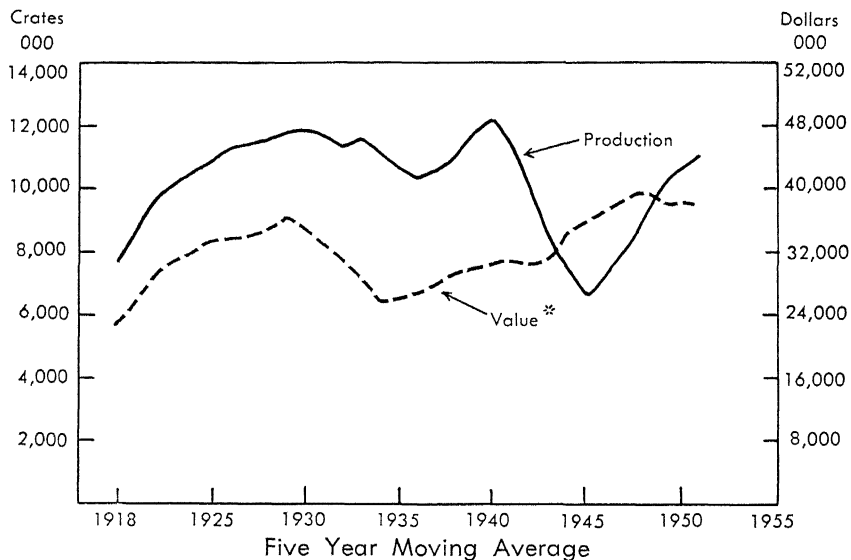
1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U. S. D. A., B.A.E.
3. Agricultural Statistics, 1953, p. 546, U.S.D.A., B.A.E.

Fig. 14.—Strawberry production and actual as well as adjusted farm price, U. S., 1918-1954.

duction fell by about 50 percent and adjusted strawberry prices almost doubled. Since the war strawberry production has increased by about 70 percent while adjusted farm prices have declined by only 40 percent. While strawberry prices have declined since 1945, the total value of the crop in prewar dollars has remained about the same or about 39 million dollars (Figure 15). In prewar years the total value followed fluctuations in production but this relationship has not been evident in postwar years.

PRICE TRENDS

Farm prices of all Ohio farm commodities and those of strawberries moved in a similar manner from 1918 to 1942 (Figure 16). Strawberry prices varied more from year to year than the average of all farm prices. Since 1942, the farm price of strawberries has risen relative to the farm prices of all farm products. The index of strawberry prices was 425 in 1946 (1934-38 = 100) when the all Ohio farm commodities index was 220. In 1954 the index of strawberry prices was 389 compared with 231 for all Ohio farm commodities.

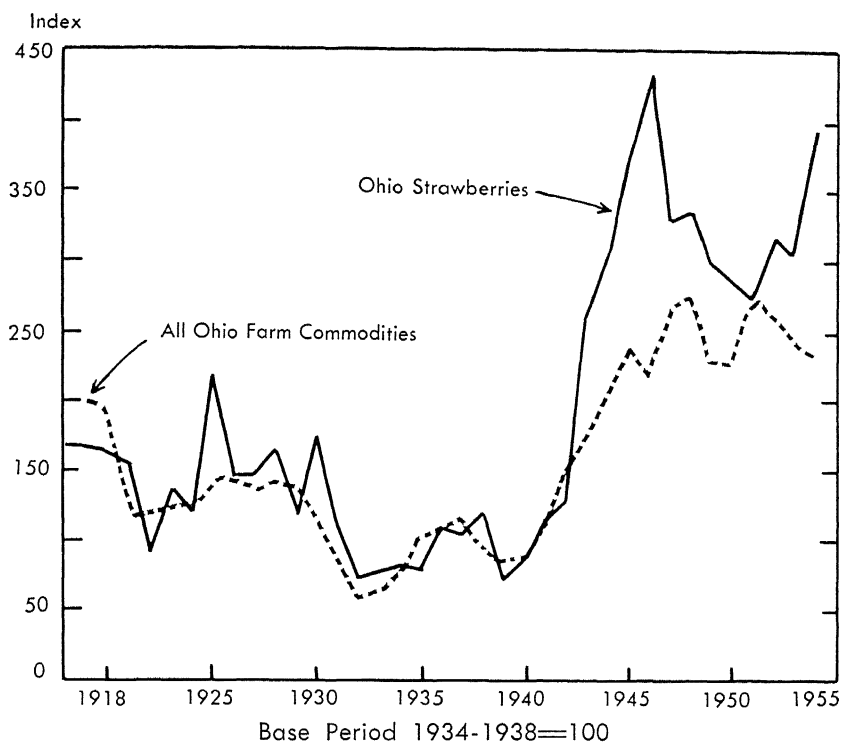


*Actual Value Adjusted by Wholesale Index of Prices, Base 1935-39 = 100.

Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, U.S.D.A., B.A.E. Agricultural Statistics, 1953, p. 546, U.S.D.A.

Fig. 15.—Strawberry production and farm value, United States, 1918-54.



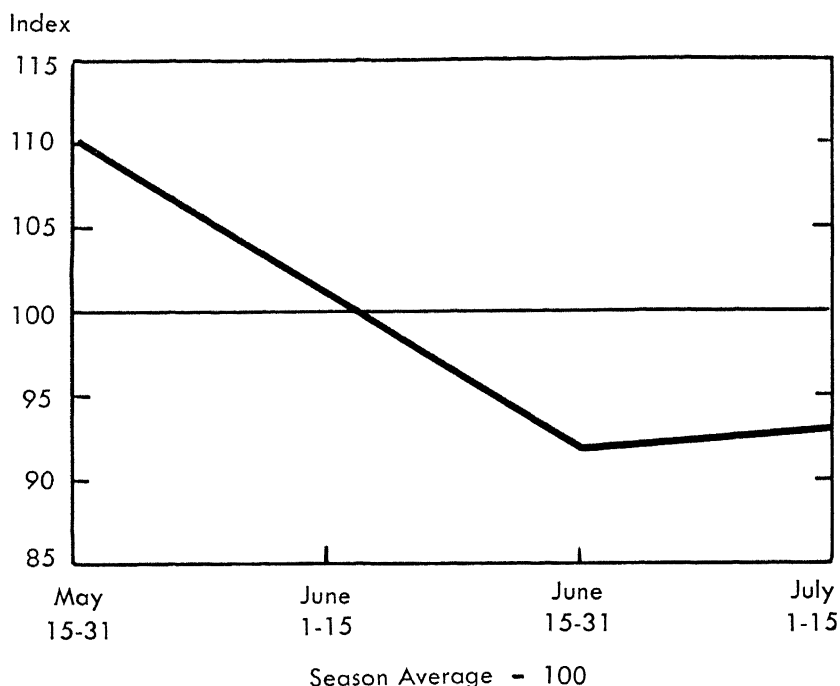
Source:

1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.
3. Ohio Agricultural Statistics, Department of Agricultural Economics, Ohio Agricultural Experiment Station, Wooster, Ohio.

Fig. 16.—Index, farm prices of strawberries and Ohio farm commodities, 1918-1954.

SEASONAL PRICE VARIATION

Over the past seven years the farm prices of Ohio strawberries have shown a distinct seasonal price decline during the harvest extending from May 15 to June 30 with little change thereafter (Figure 17). During the period May 15 to June 15 the reported price of strawberries in Ohio dropped from 110 percent of the average seasonal price to about 92 percent of average. This decline in price is much less than that occurring for most seasonal products.



Source:

1. Unpublished Information, Ohio Crop Reporting Service, U.S.D.A. Agricultural Marketing Service.

Fig. 17.—Seasonal farm price index of Ohio strawberries, semi-monthly basis, 1948-54.

PREDICTION OF OHIO STRAWBERRY PRICES

It is of some value in most lines of production to be able to predict prices ahead of marketing. As stated previously, two factors, the value of the dollar and the production or supply of the crop in question account for a major part of the year to year price variation. Other factors affecting year to year Ohio farm strawberry prices cannot be as accurately measured as the two above.

An equation for Ohio strawberry price prediction was constructed using size of Ohio strawberry crop and the value of the dollar (based on the wholesale price index) (Figure 18). The size of the Ohio strawberry crop and farm strawberry prices each year were compared with those for the previous year during the period 1919 to 1954. Wide and unexplained price deviations occurred but the predicting value of the

equation is reasonably high.¹ In 27 of the 35 years the farm price declined with an increase in Ohio production or the price increased as production declined.

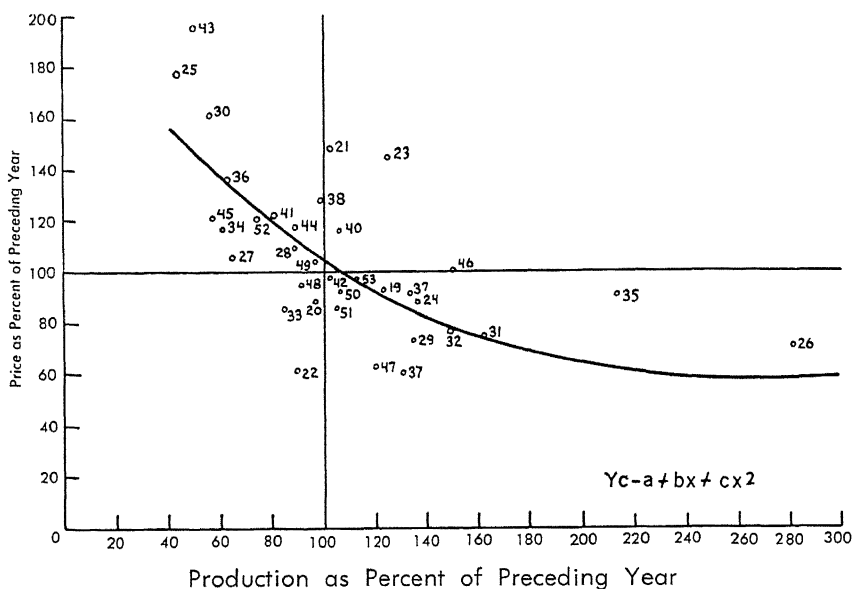
On the average, an Ohio strawberry crop 40 percent larger than that of the previous year returned a farm price 19 percent lower than during the previous year (Table 3). A crop 40 percent below that for the previous year brought a farm price about 37 percent above that for the previous year. The larger of the two crops above had a farm value about 50 percent greater than the small one. This agrees with the general opinion of Ohio growers that for Ohio a large crop is much preferred to a short one. This suggests, but does not prove, that strawberry production in Ohio could be materially increased with relatively little effect on the Ohio farm price of strawberries.

¹See footnote to Table 3.

TABLE 3.—Relationship Between Ohio Strawberry Production and Price Expressing Each as a Percent of the Previous Year*

Production as a Percent of Previous Year	Price as a Percent of Previous Year
(percent)	(percent)
40	158
60	137
70	128
80	119
90	111
100	104
110	97
120	91
130	86
140	81
160	74
180	68
200	64

*Each year was compared with the preceding year and calculations made using equation $Y_c = a + b + c x^2$; $a = 204.1$; $b = -1.32283$; $c = .003181$; Error of Estimate = 21.02; $R^2 = .4912$.



*Price Adjusted by Wholesale Index of Price, Base 1935-39=100.

Source:

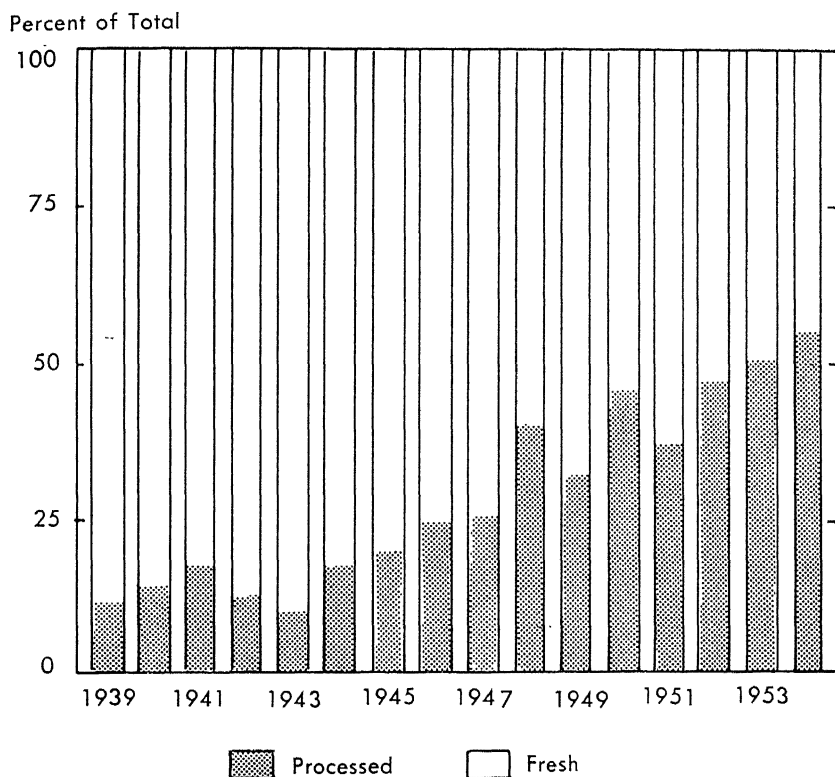
1. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
2. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.
3. Wholesale Price Index, Agricultural Statistics 1954, U.S.D.A.

Fig. 18.—Relation of production and price of strawberries, Ohio, 1918-1953.

UTILIZATION AND CONSUMPTION

Strawberry consumption in the United States in 1954 was approximately 11.9 million crates. This is about the same level as pre-World War II consumption.

Utilization of the crop shows an increasing trend towards processed strawberries, with over half being processed before reaching the final consumer. In 1954, 55 percent of the crop was processed compared with 10 percent in 1939 (Figure 19). The high perishability of the crop, distance of favored high yield production areas from major markets, the desire of consumer to eat strawberries all year, the convenience of this form of the product and the high quality of the frozen product, are all factors favoring the trend towards an increasing percentage of the crop being processed each year.

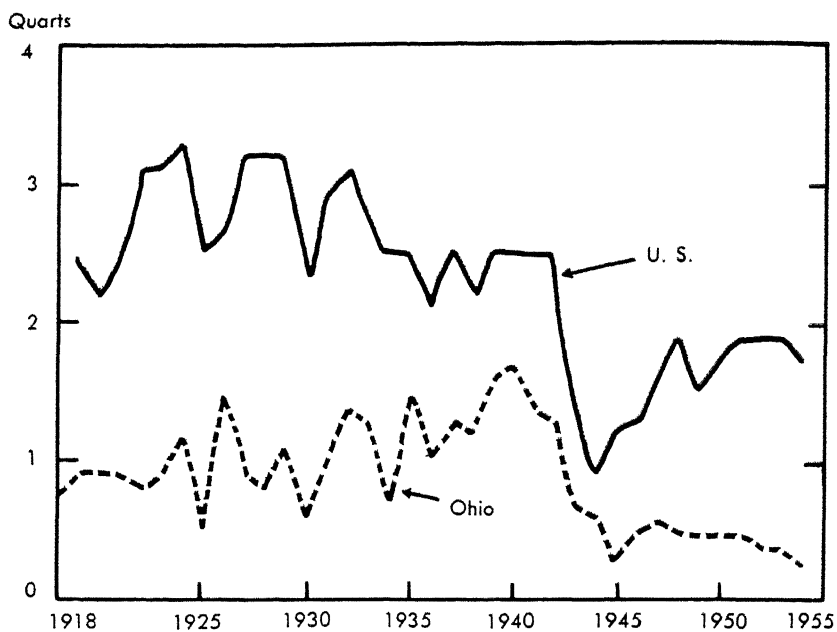


Source:

1. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.

Fig. 19.—Percentage of U. S. strawberry consumption in fresh and processed form 1939-1954.

Per capita strawberry production for the U. S. is now about 1.9 quarts compared with 2.5 quarts per person in 1941 and a high of 3.3 quarts in 1924 (Figure 20). Ohio's per capita production is 0.25 quarts at present which is approximately one-eighth of the United States average per capita production. If we assume that consumption per person in Ohio approximates the U. S. average, about seven times as many strawberries must come in from other states as are produced here. Ohio growers produce only one-third to one-fourth the fresh strawberry needs of Ohio consumers. There is considerable room for expansion of production by Ohio growers for the home market if they can meet the competition of out of state producers. Processing of any quantity of Ohio berries is out of the question as long as production is near present levels.



Source.

1. U. S. Population, Agricultural Statistics, 1954, U.S.D.A.
2. U. S. Total Production, Commercial Vegetables, TC-53, 912 and TC-54, 1249.
3. Truck Crop Reports 1918-27, 1927-41, U.S.D.A., B.A.E.
4. Commercial Vegetables for Fresh Market 1939-50, Annual Summaries 1950-54, U.S.D.A., B.A.E.
5. Ohio Population, Statistical Abstract, Dept. of Commerce.

Fig. 20.—Strawberry production per capita, Ohio and U. S., 1918-1954.